
Michigan Public Service Commission

Smart Grid General Collaborative Meeting

August 24, 2011

Paul Proudfoot, Director

Electric Reliability Division

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Smart Grid Section



Smart Grid Definition:

- The electricity delivery system (from point of generation to point of consumption) integrated with communications and information technology for enhanced grid operations, customer services and environmental benefits.
U.S. Department of Energy



MPSC Smart Grid History

- **MPSC Orders:**

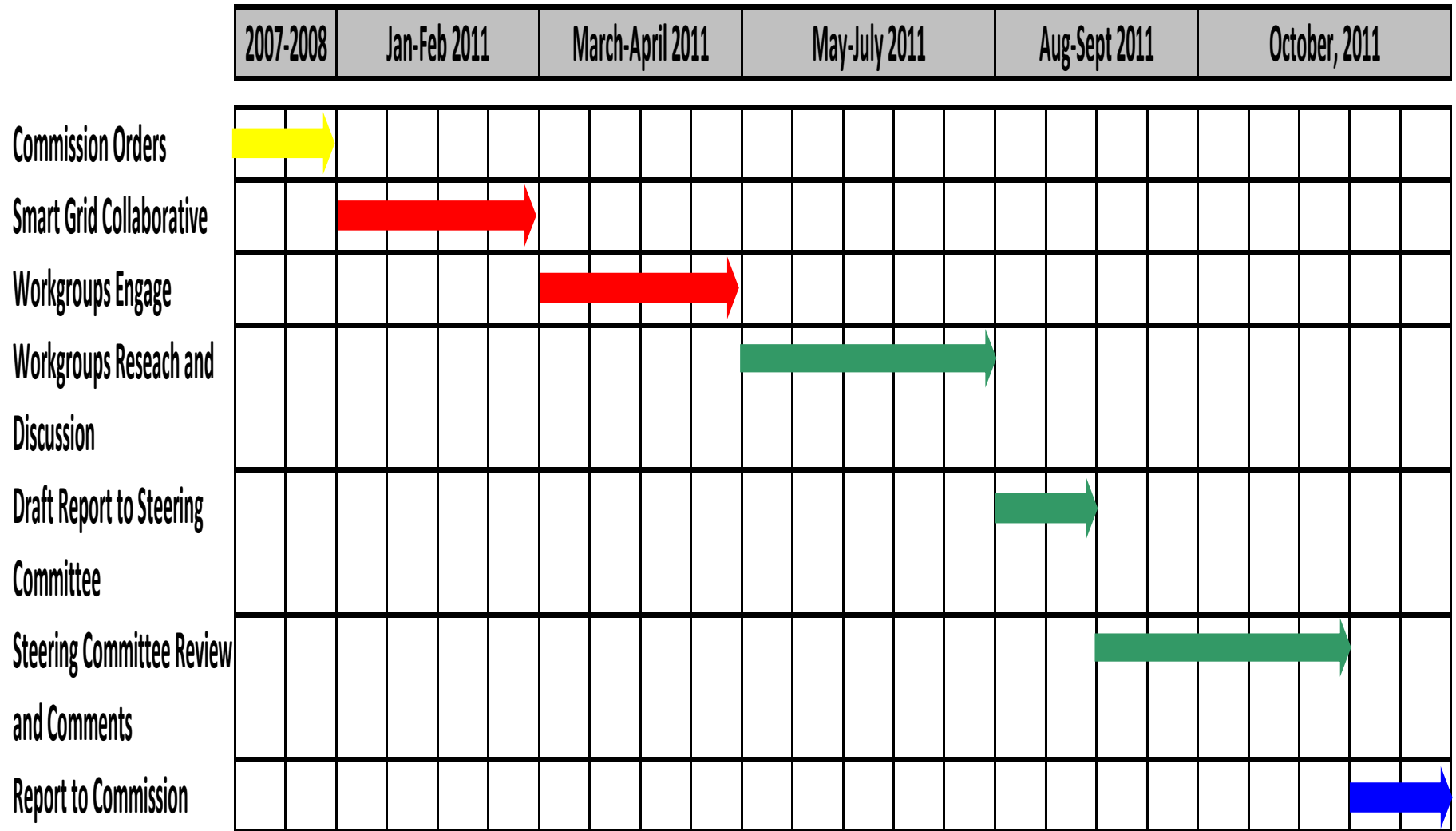
Case No. U-15278, Order Commencing Proceeding, April 24, 2007

- [T]he Commission Staff (Staff) shall convene a collaborative process to monitor national smart power grid infrastructure developments. When options appear cost-effective and practical to implement, the Staff should establish evaluation criteria and standards, triggering pilot programs or broader deployment in Michigan. The collaborative should emphasize reviewing and adopting technologies that make the grid flexible and efficient, enable distributed technologies, and preserve reliability.

Case No. U-15278, Order, March 11, 2008

- The Commission therefore directs the Michigan smart grid collaborative to include pilot programs addressing the integration of [Plug-in Hybrid Electric Vehicles] PHEVs into the electricity grid.

Smart Grid Collaborative Timeline



Michigan Public Service Commission

Smart Grid Collaborative

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Customer Programs & Communications

Successful smart grid implementation is grounded in customer understanding.

- Work Group Focus:
 - ❑ Define current status of Michigan utilities smart grid communications
 - ❑ Identify the 'best practices for customer' education
 - ❑ Establish a future vision for communications as it relates to key messages and guiding principles

Customer Programs & Communications

A national scan was completed to capture communication lessons learned from smart grid pilots and deployments.

PG&E

OGE

SRP

Oncor

Others

- Information must be accessible
- There needs to be multiple communication avenues
- Messages must be customer focused and timely
- Communications should be transparent

Customer Programs & Communications

Vision: All Michigan customers, utility employees and other stakeholders are well-informed, aware and accepting of the need for continuous improvement of the electric grid.

Key Messages

- Smart Grid means modernizing the electrical system
- Smart Grid will enable future offerings: rate options, online or in-home tools, easier for the customer to manage energy usage

Customer Programs & Communications

Successful education of Smart Grid information is rooted in clear and consistent messages.

Guiding Principles

- Messages must be customer focused
- Messages must be easy to understand
- Messages must be consistent, timely and delivered through multiple channels
- Understand the multiple voices of customers

Distribution & Grid Applications

■ Work Group Focus

- ❑ Define current status of Michigan utilities' smart grid applications.
- ❑ Classify each application's priority for deployment.
- ❑ Define the benefits and impacts of each application.
- ❑ Discussion of smart grid communications platforms and Plug-in Electric Vehicles (PEVs).

Distribution & Grid Applications

- Six groups of applications were discussed:
 - ❑ AMI Applications
 - ❑ Customer-Oriented Applications
 - ❑ Demand Response
 - ❑ Distribution Automation
 - ❑ Asset / System Optimization
 - ❑ Distributed Resources

Distribution & Grid Applications

■ Conclusions

- ❑ The “smart grid” is not a single technology upgrade to the electric grid.
- ❑ Applications do not need to be deployed at the same time.
- ❑ There are many opinions regarding what the “right” sequence of application deployment is.
- ❑ Each application has benefits as well as impacts and costs associated with it.

Generation & Transmission – Bulk Power

- Smart Grid Technology Deployment:
 - Not “smart grid”, but best solution for the problem.
 - Catalog of technologies being installed by MISO, Transmission Owners and Generators.
 - Changes in one segment of BPS can potentially impact system and needs proper planning and coordination

Generation & Transmission – Bulk Power

■ Down the road...

□ Projects or Pilots are focused on:

- Managing power flow across Michigan's UP (ATC MTEP project)
- Vehicle to Grid (V2G) Demonstration (DTE/NextEnergy)

□ MISO

- DOE funded Synchrophasor Pilot Project
- Holding stakeholder discussions about the impact of dynamic retail rates on load curves, especially load peaks.



Generation & Transmission – Bulk Power

■ Goals:

- Prioritized by area of primary impact
 - Communicate & coordinate,
 - Target areas of greatest benefit,
 - Reduce system costs,
 - Study integrate renewable energy and distributed generation options.

- Develop a strategic plan for Michigan



Codes & Standards

- Forum of Michigan utilities and the MPSC collaborating on smart grid interoperability standards
- Smart Grid as a national policy goal in Energy Independence and Security Act of 2007 (EISA)



State Level

- MPSC Smart Grid Collaborative
- Potential legislation
- NARUC resolutions
- Utility to utility collaboration



Federal Level

- NIST Framework & SGIP
- FERC proceedings
- DOE proceedings
- Potential legislation
- Utility to utility collaboration

Codes & Standards

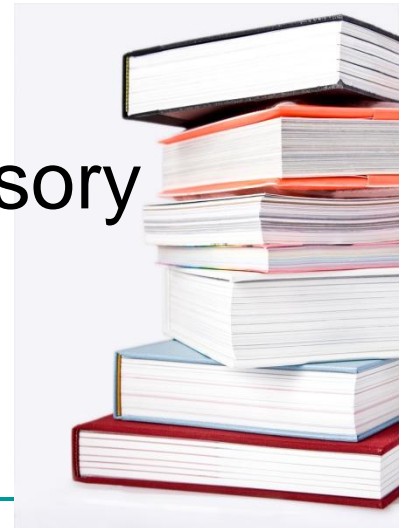
- Meet on regular basis to discuss ongoing national standards development work
- Work together to further MI's interests in standard development organizations (SDO's)
- Developed a comprehensive list of standards, practices, and guidelines considered relevant for the development and deployment of a robust and interoperable Smart Grid
- Application of the standards by the stakeholders is not mandatory but recommended along with other sources such as the NIST Framework and the SGIP Catalogue of Standards

Codes & Standards

- Benefits of development of codes and standards for smart grid technologies:
 - Avoid vendor lock-in
 - Enable technology innovation
 - Prevent Premature technological obsolescence
 - Support global market development of Smart Grid
- Codes & Standards Group
 - Continue to monitor and influence smart grid standards development
 - Update list of applicable SG standards for MI

Regulatory Policy

- Work Group Focus: Two Fold
 - Explore the impact of smart grid technology on policy.
 - Recommend policy related to potential smart grid investment.
- Policy Recommendations are Advisory



Regulatory Policy

- Complex policy compounded by multiple viewpoints resulting in multifaceted discussion.
 - ❑ Potential deployment of smart grid technology
 - ❑ Cost benefit analysis framework
 - ❑ Cost recovery concerns
 - ❑ Customer protection implications



Regulatory Policy

■ Subgroup Tasks

□ Deployment:

- Identify categories of existing and potential policies, explored issues related to existing and potential policies, next steps.



Cost-Benefit Framework:

- Develop framework for classification of smart grid costs and benefits.



Regulatory Policy



❑ Cost Recovery:

- Identify current cost recovery issues and explore Michigan policies to address cost recovery of smart grid programs.

❑ Customer Protections:

- Review current customer protection topics related to smart grid deployment and address need for future protection measures.

